

# OPEC, FLARING, OFFSHORE DRILLING AND MORE

FundamentalEdge Report | July 2018

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FundamentalEdge

by [drillinginfo](http://drillinginfo.com)

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## Introduction

This monthly update of the *FundamentalEdge* report presents an analysis of key market dynamics currently impacting the energy market.

- **Crude oil** prices have climbed on a balanced supply & demand reality coupled with geopolitical tensions, continued Venezuelan production declines, the reinstatement of Iranian sanctions, & periodic supply outages. Prices were initially driven up by speculators, but this segment has played a lesser and lesser role in recent months as the long positions have retreated. **OPEC** has decided, after a long period of overcompliance, that they will normalize production to quota levels.
- **Gas flaring** is part of the exploration, production and processing process of crude oil, gas and NGLs from shale plays. In North Dakota, the flared volumes became so large that regulatory agencies had to intervene. Regulations of gas flaring incentivized the addition of infrastructure, mainly processing plants, in order to move gas to markets. **In Texas and specifically in the Permian Basin**, production is growing faster than processing and pipeline takeaway capacity. Flaring is at record highs with 1Q018 volumes four times higher than levels seen before 2010.
- Since the US shale era started, **offshore drilling** has seen its contribution to total US production reduced significantly. However, earlier this year, President Trump proposed a plan to open up nearly all US offshore areas for drilling. Major offshore producers are expecting a rebound in activity. Offshore projects have long lead times and are very capital intensive. They must compete with quicker turn-around onshore unconventional projects.
- Finally, FERC's rule on MLP's and the US/EU agreement are also analyzed in this report (Slides 15-16)

# OPEC: Compliance, SANCTIONS, & The Adjustment

OPEC has had above 100% compliance since October 2017. This has driven declining global inventories & increasing prices. In the last OPEC meeting, members holding quotas agreed to return compliance to 100% (increase production).

Compliance returned to 120% quickly and the normalization to 100% is likely to continue.

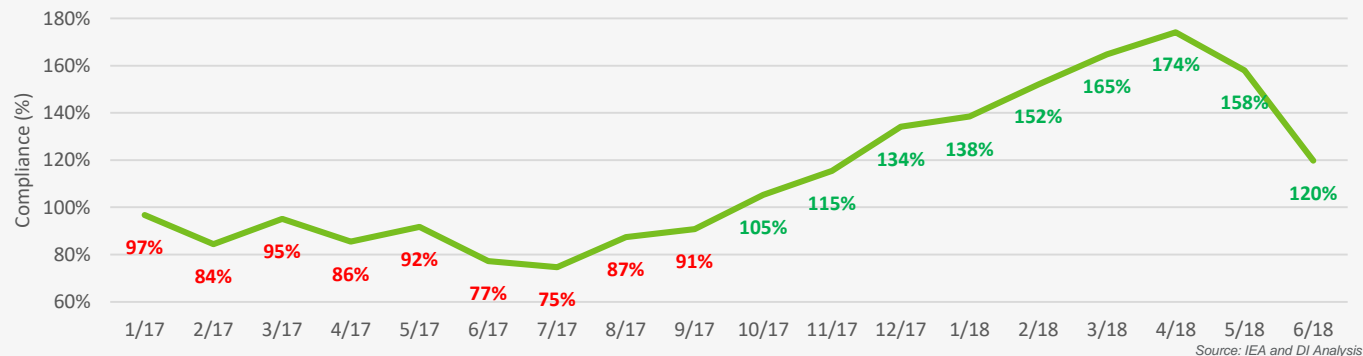
DI estimates 3,085 MBbl/d could come online if all quota holding producers achieve maximum volumes since 2012. This is defined as "spare capacity".

Reinstated Iranian sanctions may take some production off the market. This could cause a loss of 961 MBbl/d of global supply.

The recent maximum production from these countries since 2012 were used to estimate "spare capacity". When questionable volumes (much earlier peaks, Venezuela, & Iran) are removed, there is an additional 982 MBbl/d that may come online.

TABLE 1  
**OPEC Quotas Update**

Member	Quota (MBbl/d)	June 2018 (MBbl/d)	Compliance (MBbl/d)	Max. Prod. (MBbl/d)	Spare Cap. (MBbl/d)
Saudi Arabia	10,058	10,460	-402	10,640 (Nov. 2016)	+180
Iraq	4,351	4,550	-199	4,680 (Dec. 2016)	+130
UAE	2,874	2,900	-26	3,180 (Dec. 2016)	+280
Kuwait	2,707	2,720	-13	2,940 (Aug. 2016)	+220
Venezuela	1,972	1,300	+672	2,610 (Jul. 2012)	+1,310
Angola	1,673	1,450	+223	1,850 (Aug. 2012)	+400
Algeria	1,039	1,050	-11	1,200 (Jan. 2012)	+150
Qatar	618	1,050	-2	750 (Sep. 2012)	+130
Ecuador	522	620	-8	560 (Sep. 2016)	+30
Gabon	193	530	-7	253 (Dec. 2012)	+53
Iran	3,797	200	+7	3,850 (Oct. 2016)	+60
Eq. Guinea	128	3,790	-2	272 (Jun. 2012)	+142
<b>TOTAL</b>	<b>29,932</b>	<b>29,700</b>	<b>+232</b>	<b>32,785</b>	<b>+3,085 +982</b>



Source: IEA and DI Analysis

# SHORT-TERM FORECAST: GLOBAL SUPPLY/DEMAND

The global crude market has had a supply deficit for a longer than a year but that deficit has dwindled despite all of the troubles impacting supply.

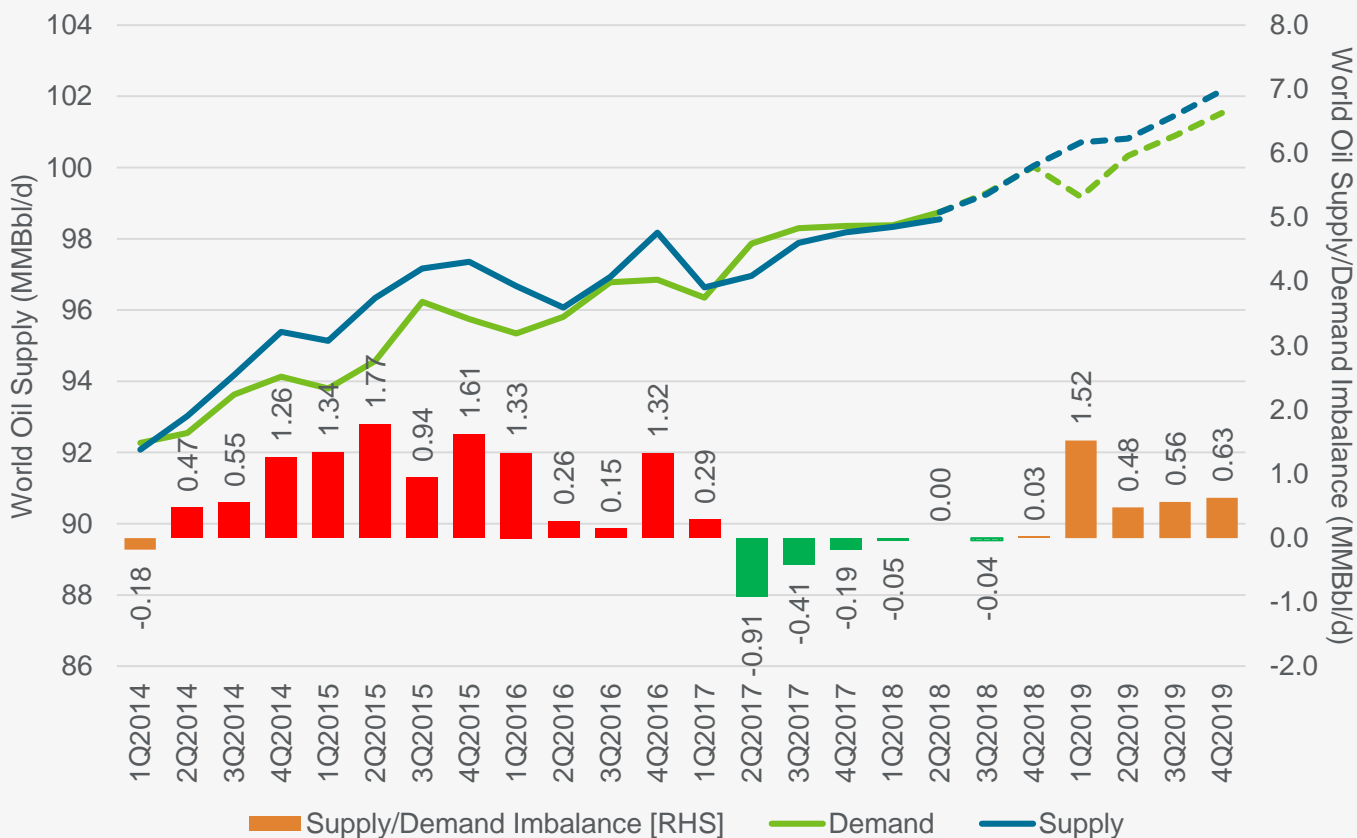
If OPEC returns to 100% compliance, the US continues on its current trajectory, and demand follows IEA's forecast, then, contrary to popular opinion, the market may be heading towards an oversupply situation.

The recent slow down in the pace of inventory declines shows that this has already started.

However, it must be noted that there are some factors that could reverse this course:

- Continued Venezuelan declines.
- Libyan & Nigerian production fluctuations.
- Inability of OPEC countries to offset these declines by bringing back online spare capacity.

CHART 1  
Global Supply and Demand Outlook

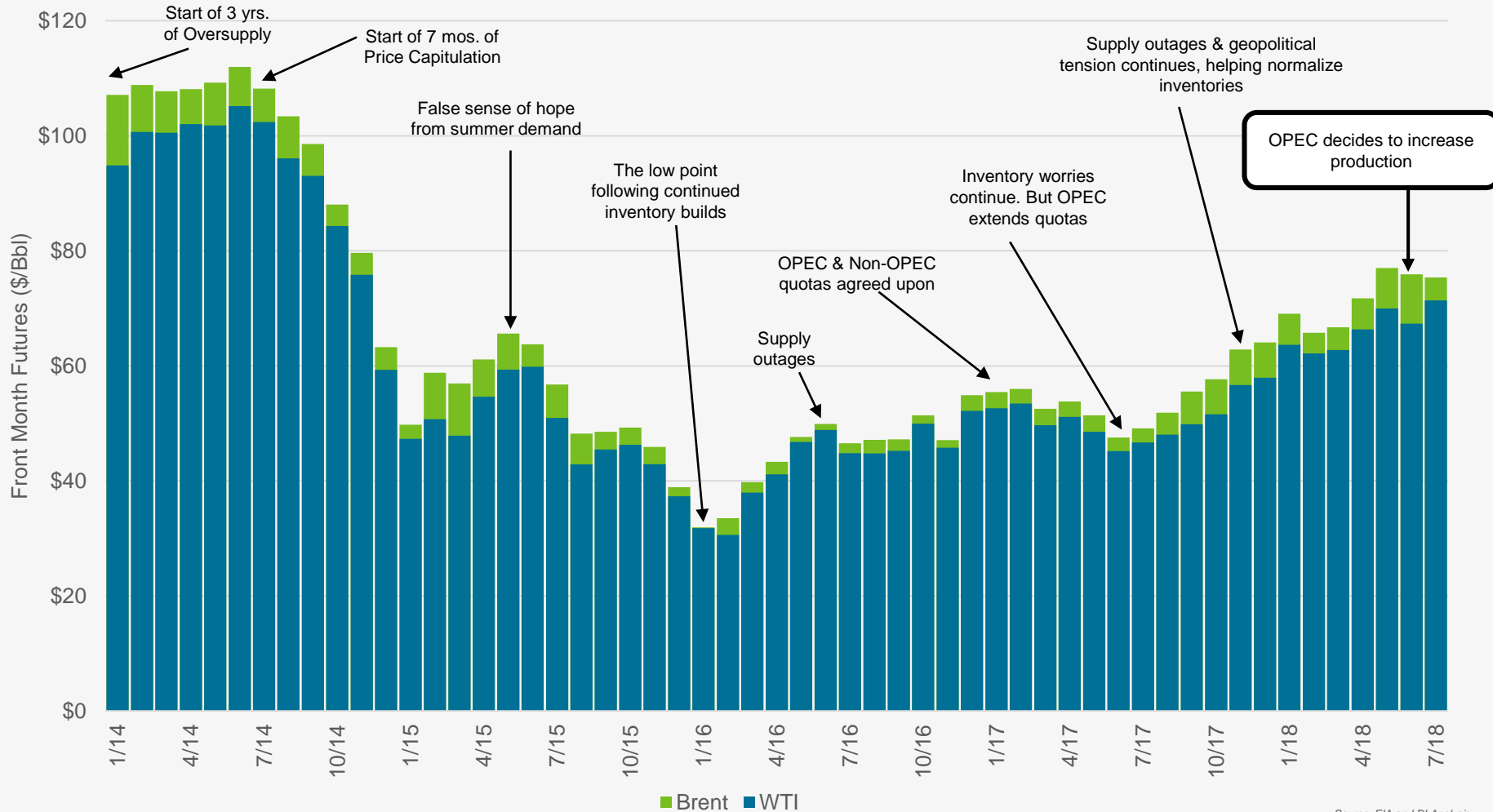


Source: IEA and DI Analysis

# Crude Oil Prices: 2014-18 Drivers

CHART 2

## Global Supply and Demand Outlook



Source: EIA and DI Analysis

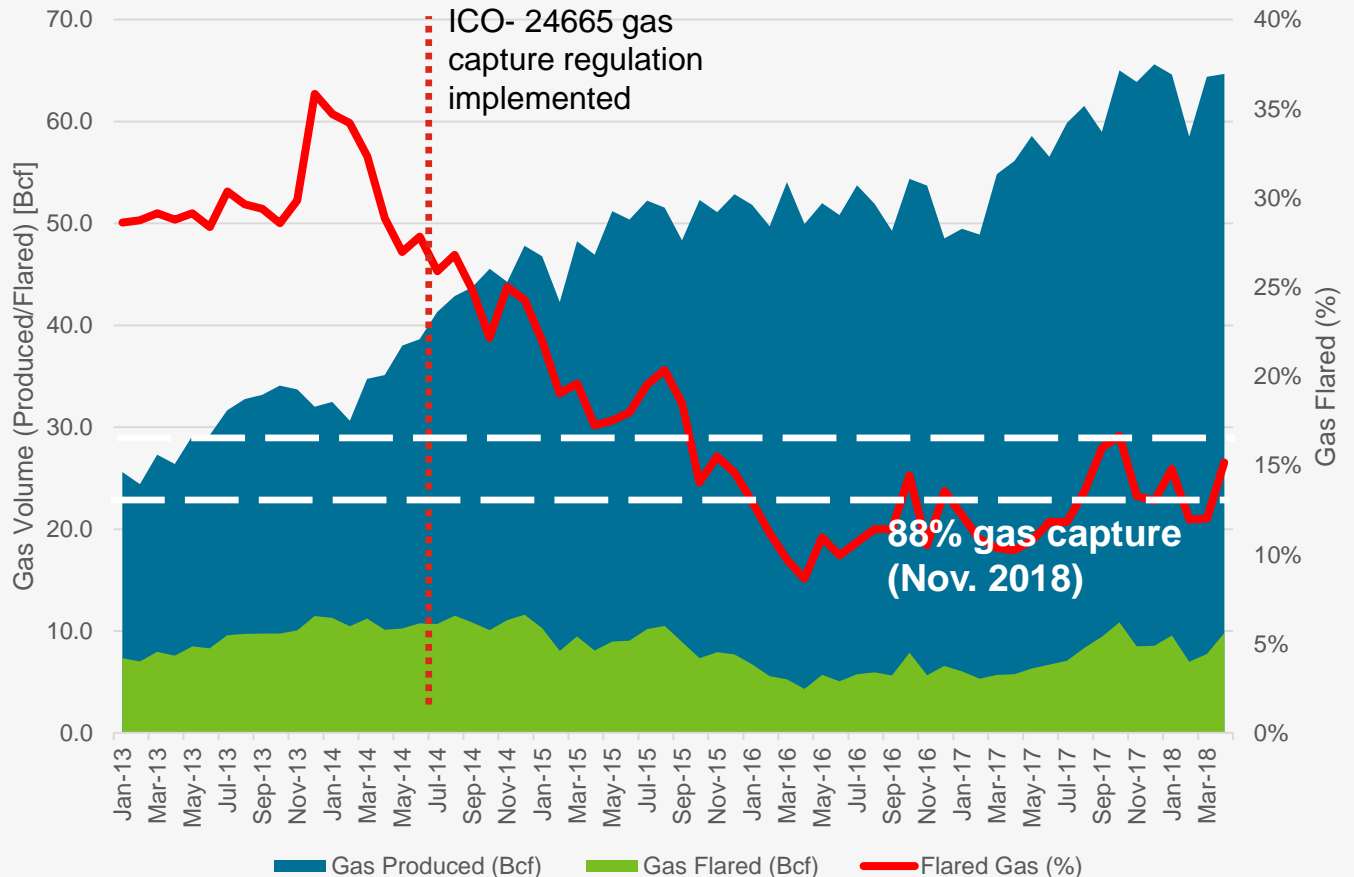
# Gas Flaring in North Dakota

Gas flaring has been a key issue in the Williston basin in North Dakota.

It offers great insight into impact of effective implementation of flaring regulations.

North Dakota regulatory agencies released upcoming policy changes with an 88% gas capture expectation.

CHART 3  
Gas Flaring in North Dakota



Source: www.nd.gov, DI

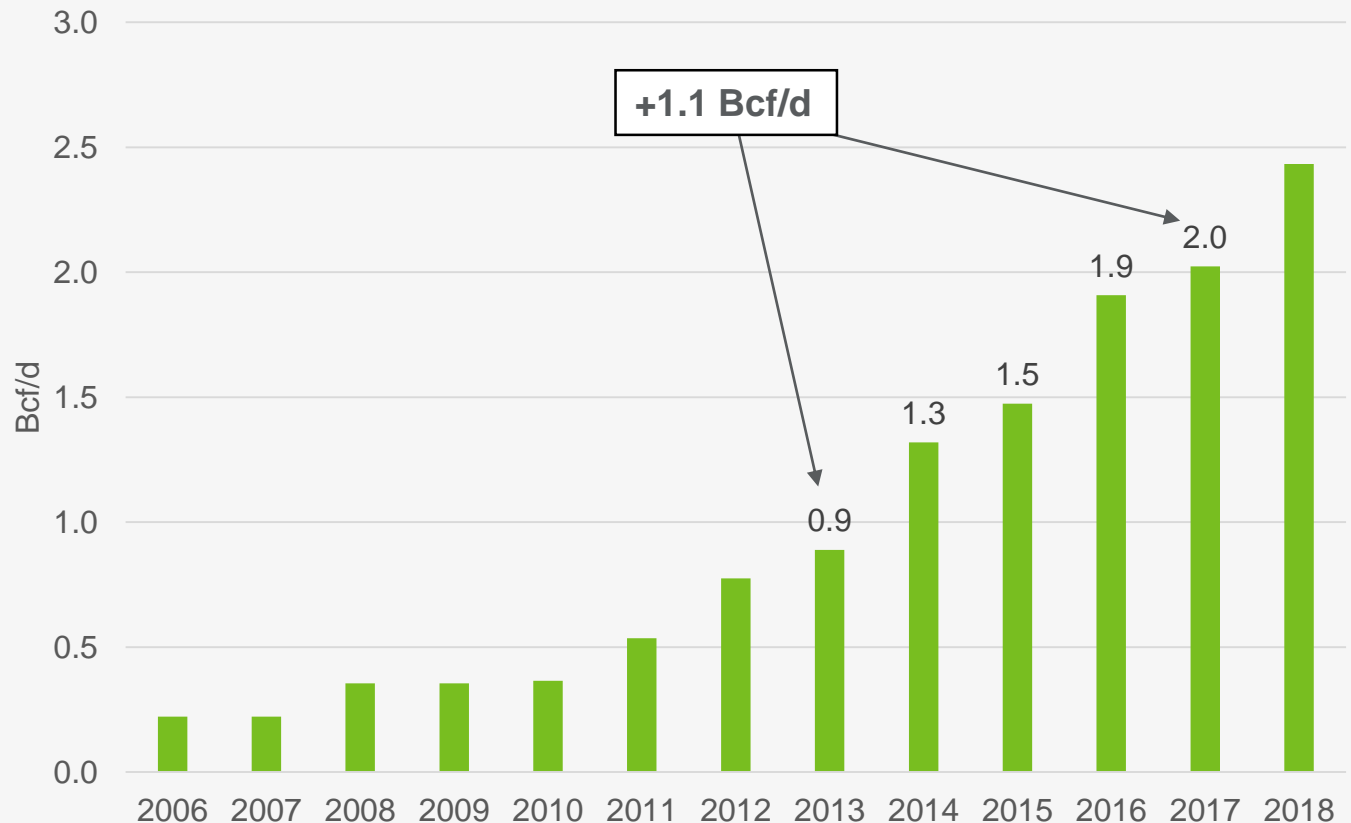
# North Dakota Processing Plant Capacity

The additional gas in system was handled by a significant growth in processing plant capacity.

The capacity of processing plants doubled in the two years following ICO-24665 implementation in 2014.

CHART 4

## North Dakota Natural Gas Processing Capacity



Source: [www.nd.gov](http://www.nd.gov)



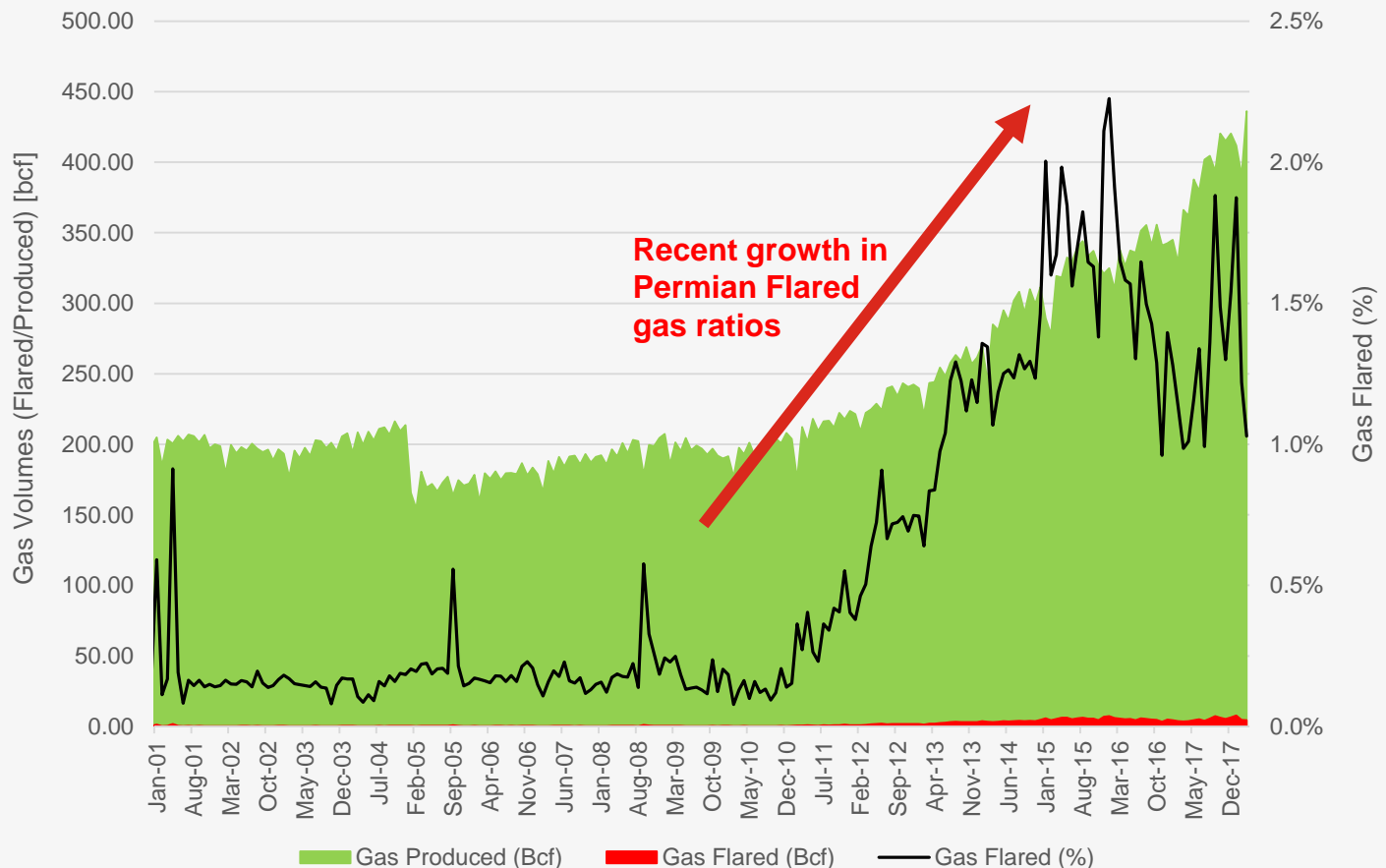
# Permian: Gas Flaring Trends

The Permian Basin has seen significant growth in the last 5 years. This has also been accompanied by increased flaring of natural gas produced from the Basin.

Flared natural gas went from 0.31 Bcf in Jan 2011 to 7.74 Bcf in 2018 (2,384% increase)

Although still volumetrically small in comparison to overall production, the growth trajectory may indicate a potential problem in the future.

CHART 5  
Permian Gas Production and %Flared



Source: TXRRC

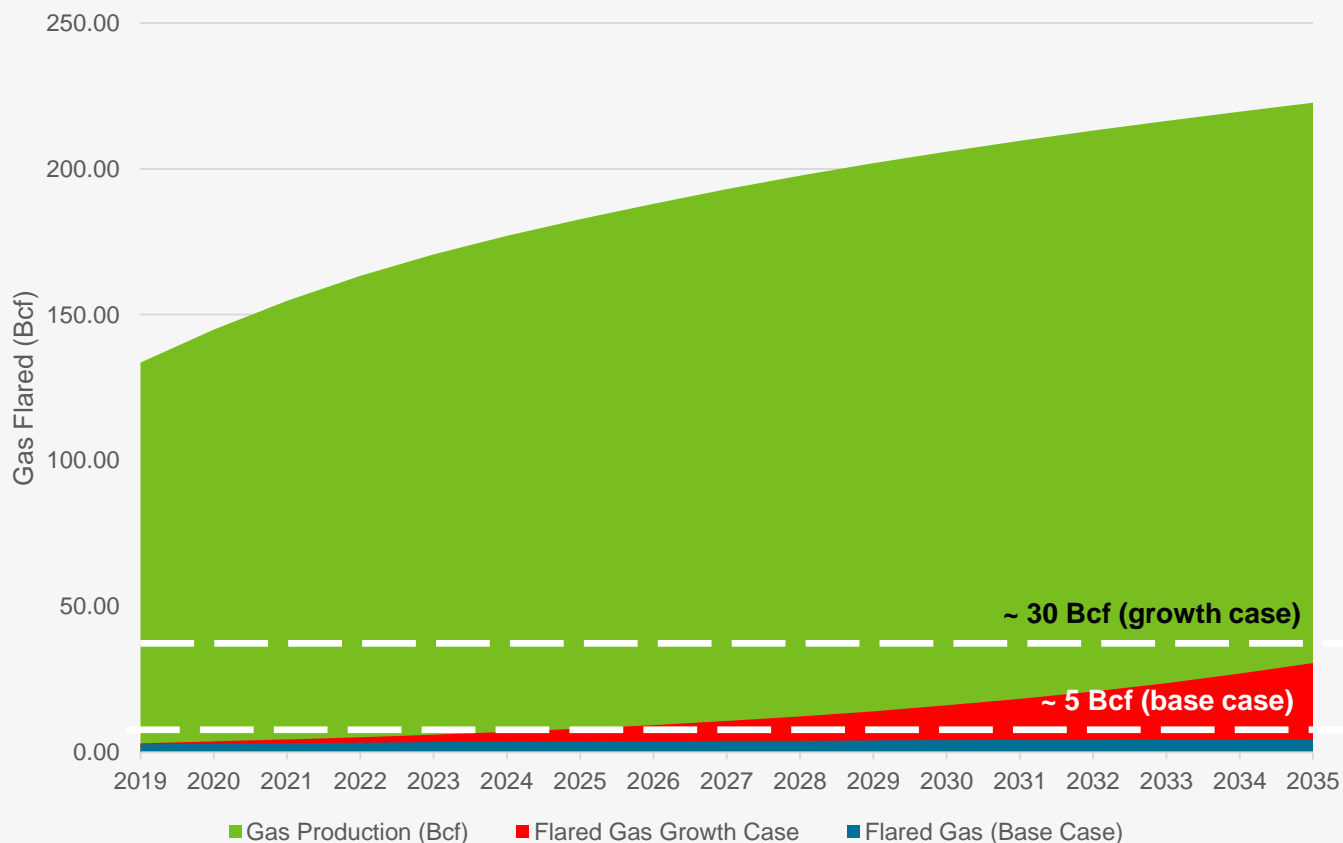
# Permian: Gas Flaring Trends

Current trends show potential for increased flaring in the Permian Basin.

The Base Case shown depicts a scenario where the current rate of flaring of 2% is held steady throughout the forecast.

The Growth Case takes into consideration the rate at which the flared gas ratio has been growing over the last 4 years.

CHART 6  
Permian Gas Flaring Scenarios



# Offshore Drilling

President Trump proposed a plan to open up nearly all US offshore areas for drilling, including 25 of 26 regions of the outer continental shelf. On January 4, 2018, US Secretary of the Interior Ryan Zinke announced the National Outer Continental Shelf Oil & Gas Leasing Program (National OCS) for 2019–2024. The lease program is estimated to provide 90 billion barrels of undiscovered technically recoverable oil as well as 330 trillion cubic feet of undiscovered technically recoverable natural gas.

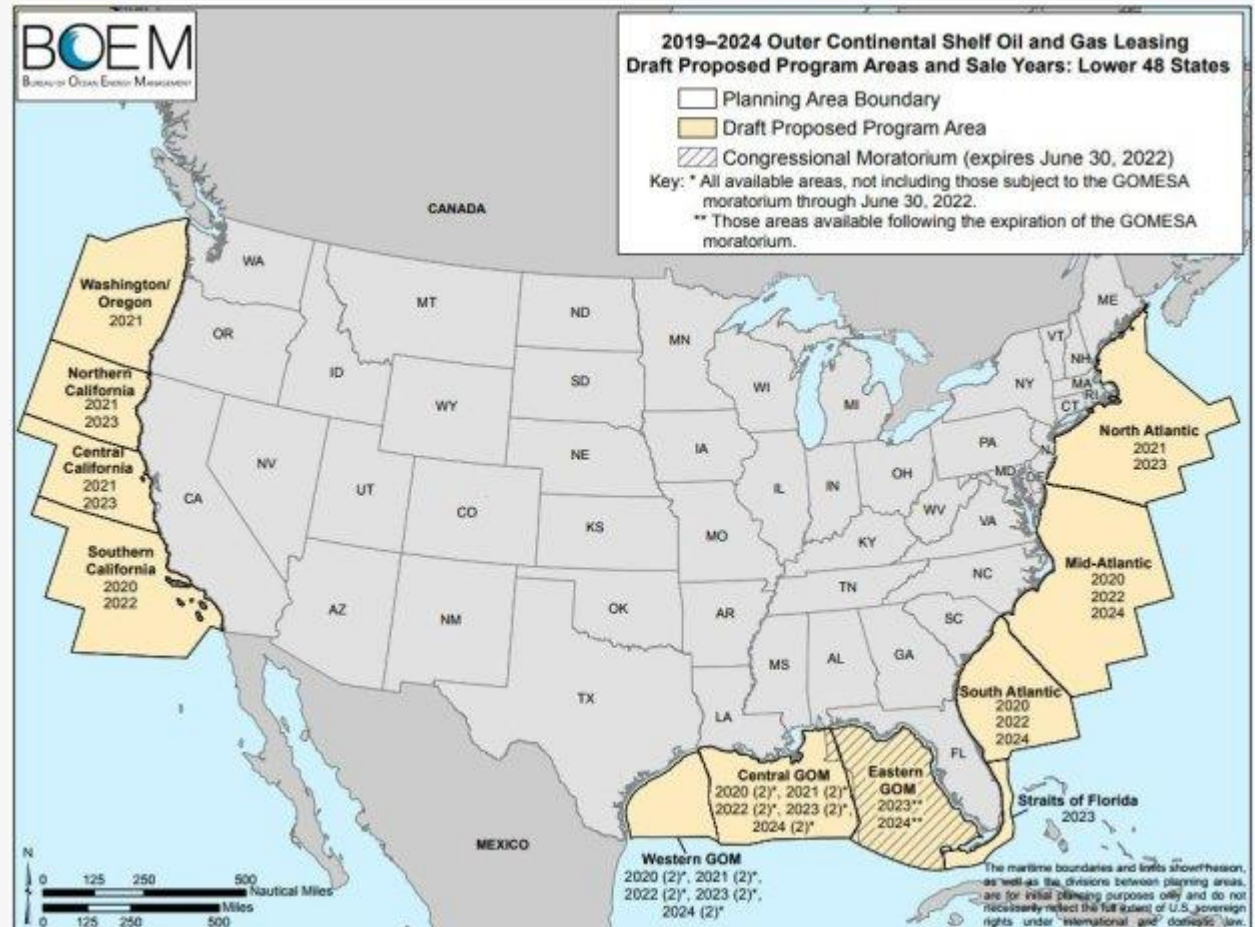
The first lease sale, Lease Sale 250, for almost 14,000 blocks produced very little interest, as only 815k acres of the 77MM acres were bid on.

The Bureau of Ocean Energy Management will hold another lease sale, Lease Sale 251, scheduled for August 15th, 2018. This sale includes more than 78MM acres in the Gulf of Mexico. It will be interesting to see the attention Lease Sale 251 receives.

Offshore drilling projects are capital intensive due in part to the long lead times, making it less attractive when oil and gas prices are in a downturn.

CHART 7

## Gulf of Mexico Oil and Gas Leasing Program



# Proposed Offshore Projects 2018-19

*In the near term, there are multiple projects expected to come online.*

*Most offshore projects are taken on by the major players in the oil and gas industry. Mentioned on the previous slide, investing in offshore projects makes a company vulnerable to significant price changes.*

*Non-major players are more comfortable drilling onshore shale, where you can drill a well and have production online in several months and stop drilling when needed based on market conditions.*

*However, without these more capital intensive, long lead offshore projects (globally), there may occur a shortage in supply due to lack of investment in the longer run.*

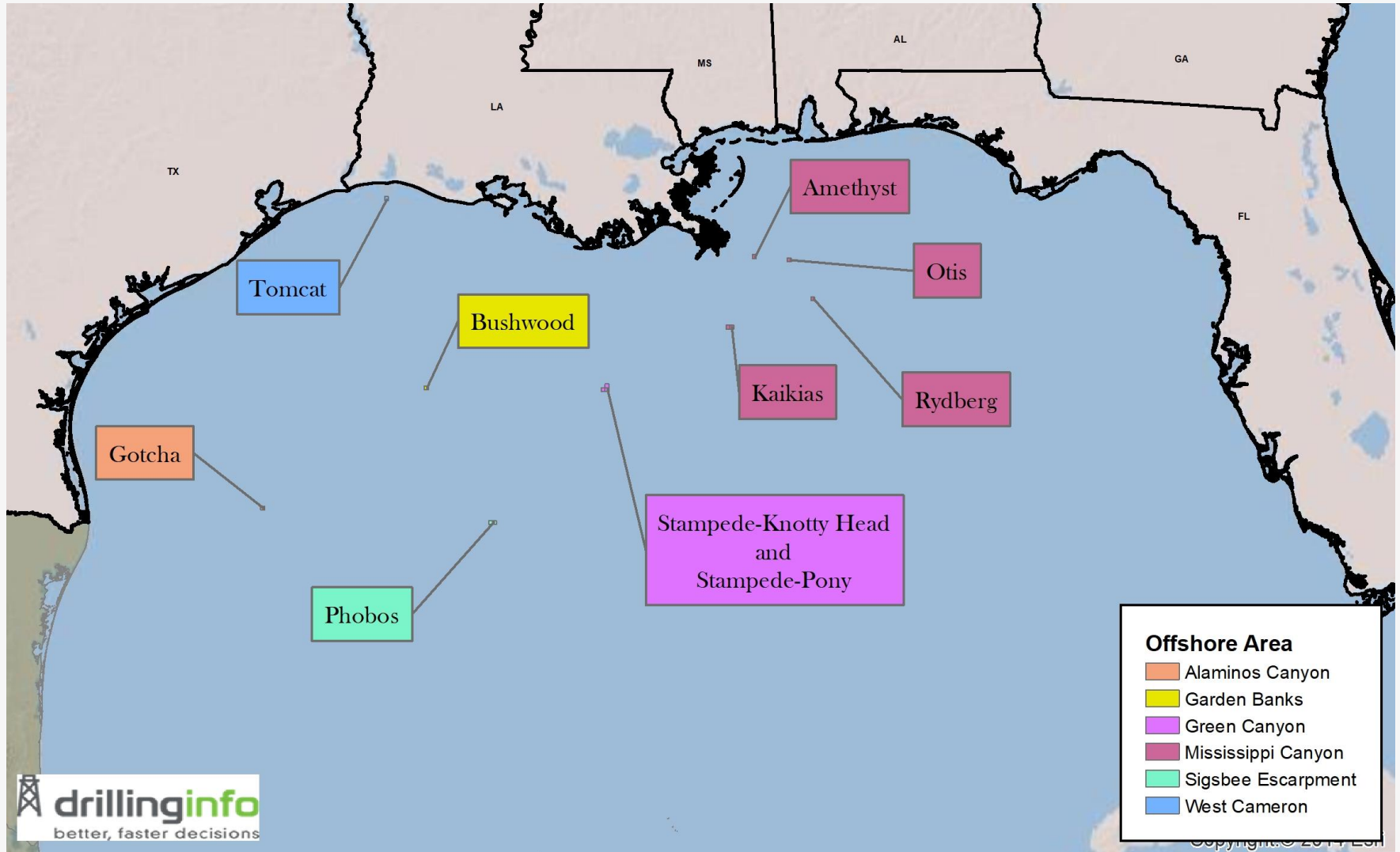
TABLE 2

## Gulf of Mexico Crude Projects

Field	Majority Operator	Water Depth (ft)	Discovery Year	Anticipated Start Date
Amethyst	Stone Energy	1,200	2014	2018
Stampede-Knotty Head	Hess	3,557	2005	2018
Stampede-Pony	Hess	3,497	2006	2018
Otis	LLOG	3,800	2014	2018
Bushwood	Apache	2,700	2009	2019
Gotcha	Shell	7,844	2006	2019
Phobos	LLOG	6,919	2013	2019
Rydberg	Shell	7,500	2014	2018
Tomcat	Stone Energy	1,200	2014	2018
Kaikias	Shell	4,575	2014	2018

Source: EIA July18 Short Term Energy Outlook

# Offshore Projects Map



# Gulf of Mexico Production

Natural gas production in the Gulf of Mexico has been on a steady decline since 2005 when levels reached over 10 Bcf/d and accounted for 19% of total US dry natural gas production.

In 2017, the US produced 9.2 Bcf/d and represented only 4% of total US gas production. Drillinginfo expects GoM dry gas production to increase to ~3.3 Bcf/d by 2023, up 0.3 Bcf/d from 2017.

On the oil side, crude production averaged 1.4 MMBbl/d in 2015 for a 27% share of total US production. In 2017, crude production was higher and set a record high at 1.7 MMBbl/d. That represents 19% of the total crude produced.

Drillinginfo expects GoM crude production to reach ~2.2 MMBbl/d by 2023 as the projects listed in the previous two slides are placed online.

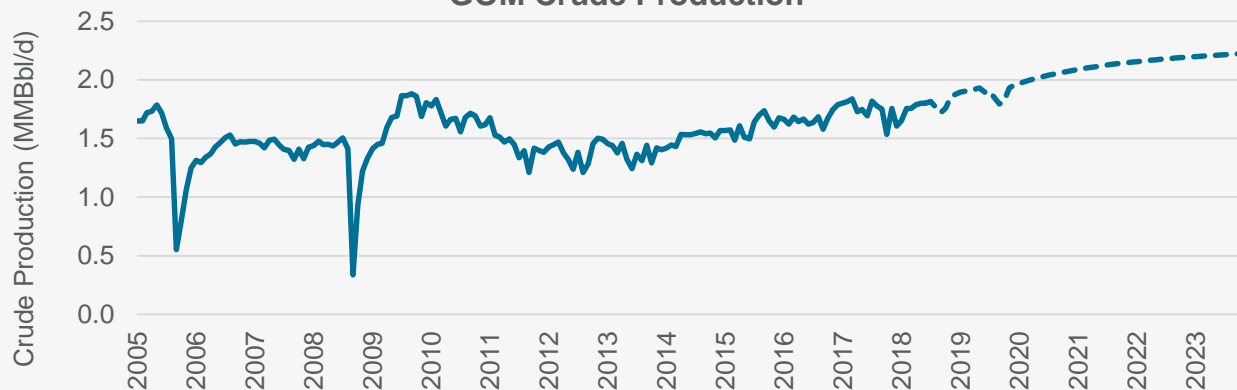
CHART 8

## Gulf of Mexico Dry Gas & Crude Oil Production

### GOM Dry Gas Production



### GOM Crude Production



Source: DI ProdCast

# FERC MLP Rule Change

On March 15th, 2018 FERC proposed a rule on MLP owned interstate gas & liquids pipelines following a FERC v United Airlines court case. MLPs would no longer be able to include income tax in their cost of service tariff rates because it caused a double recovery of income taxes. FERC produced a final ruling on July 18<sup>th</sup>, 2018, which was a relief to many.

FERC provided 4 options to pipelines to address the Tax Cuts and New Jobs Act.

- 1) File a rate reduction with FERC.
- 2) Commit to file a rate case in the future.
- 3) File with FERC reasons why you should not be subject to a rate reduction.
- 4) Do nothing.

As for MLPs, FERC gave them a choice as it relates to option 1. The MLP can keep the income tax allowance in their cost of service tariff calculation, however, they must adjust the calculation based on the reduction of corporate taxes from 35% to 21%. MLPs can otherwise choose to do away with the income tax allowance to lower the cost of service tariff to be more "just and reasonable". Note, they can also choose to do nothing. This rule is merely guidance on how FERC will handle future cases.

Before FERC announced the final ruling on July 18<sup>th</sup>, buyouts or restructurings happened for some MLPs. Williams Cos had attempted to purchase it's MLP back in 2015, so Williams buying the remaining units for the MLP was only a matter of time. However, for the other companies, it is unknown if these companies would have completed this kind of transaction if FERC hadn't announced a rule change in March.

TABLE 3

## MLP Consolidations

Buyer	Seller	Price (\$MM)	Stock Premium
Williams Cos.	Williams Partners LP	\$10,500	6.4%
Enbridge	Spectra Energy Partners LP	\$4,185	0%
Enbridge	Enbridge Energy Partners LP	\$6,592	0%
Loews Corp	Boardwalk Pipeline Partners	\$1,500	0%
Cheniere Energy Inc	Cheniere Energy Partners LP	N/A	1%

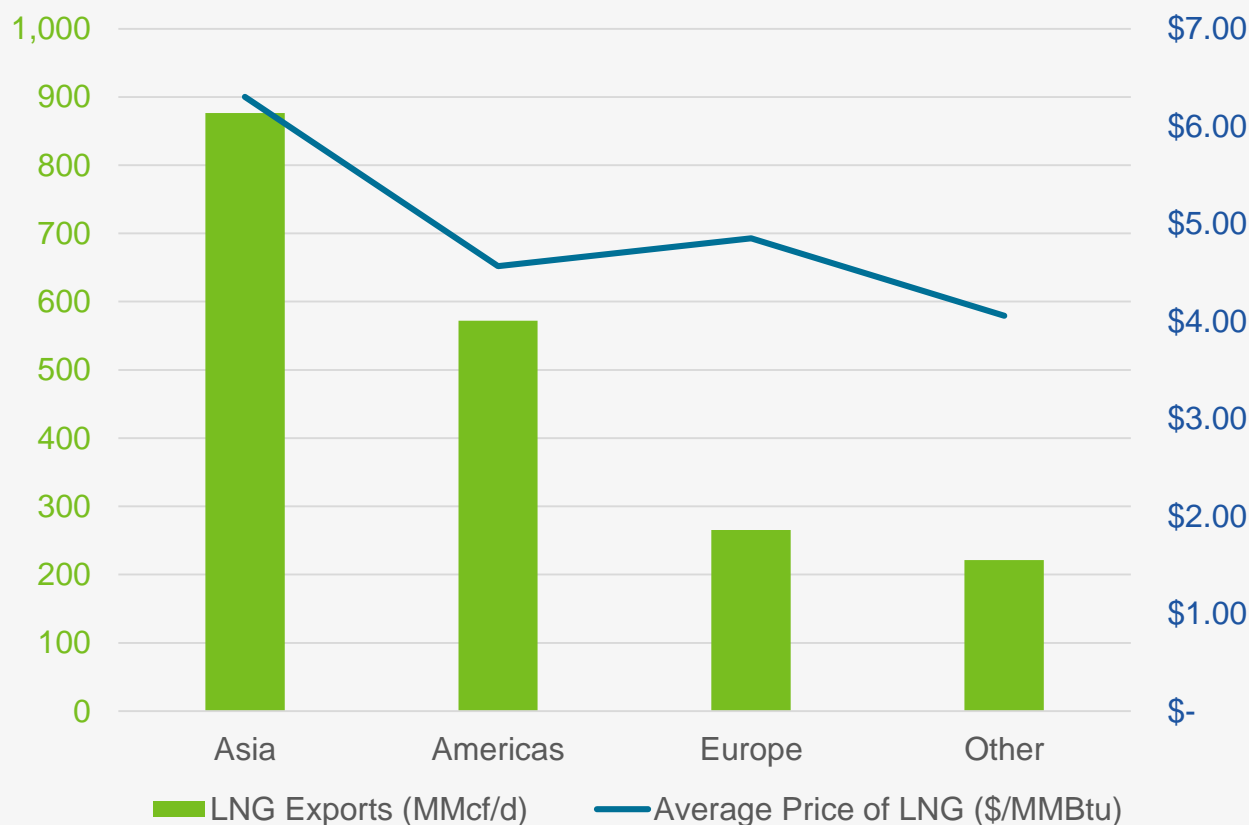
# US/EU Agreement and Impact on LNG Exports

On July 25<sup>th</sup>, President Trump announced that the United States and the European Union have agreed to strengthen their strategic cooperation with respect to energy. This includes facilitating more US natural gas shipments to the EU.

In 2017 and as shown in Chart 9, the US sent most of its gas (45%) to Asia where gas prices are more favorable. Only 14% of US gas found a home in Europe where prices are 20% lower than in Asia,

Therefore, although this agreement may have an impact in the longer term after LNG terminals are built, Asia will continue to be main destination for US gas due to the competitive advantage in terms of higher prices.

CHART 9  
2017 US LNG Exports and Price by destination



Source: EIA



## Contact

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